

equalizer response $DFE(z)$ and an error predictor having an error prediction response $EP(z)$, and wherein after the indication of the coefficients is conveyed to the transmitter, an updated filter response $DFET'(z)$ is implemented in the feedback loop filter substantially as given by $DFET'(z) = [1+DFET(z)][1+DFE(z)\{1-EP(z)\}-EP(z)]-1$.

9. (Original) Apparatus according to claim 8, wherein after the updated filter response is implemented in the feedback loop filter, the equalizer response $DFE(z)$ and the error prediction response $EP(z)$ are set to zero.
10. (Original) Apparatus according to claim 9, wherein the FFE has an adaptively-determined feed-forward response $FFE(z)$, and wherein the error predictor comprises a finite impulse response filter have a number of taps N , and wherein when the indication of the coefficients is conveyed to the transmitter for implementation in the precoder, an updated feed-forward response $FFE'(z)$ is implemented in the FFE substantially as given by $FFE'(z) = FFE(z)(1-EP(zN))$.
11. (Original) Apparatus according to claim 8, wherein the feedback loop filter comprises a finite impulse response filter having a predetermined number of taps, and wherein a time-domain representation of the updated filter response $DFET'(z)$ is adjusted so as to implement the updated filter response using the predetermined number of taps.
12. (Original) Apparatus according to claim 1, wherein the Tomlinson-Harashima precoder comprises a feedback loop filter having a filter response $DFET(z)$, and wherein the adaptive filter comprises a decision feedback equalizer having an equalizer response $DFE(z)$, and wherein after the indication of the coefficients is

conveyed to the transmitter, an updated filter response $DFET'(z)$ is implemented in the feedback loop filter substantially as given by $DFET'(z) = [1+DFET(z)][1+DFE(z)]^{-1}$.

13. (Original) Apparatus according to claim 1, wherein the Tomlinson-Harashima precoder comprises a feedback loop filter having a filter response $DFET(z)$, and wherein the adaptive filter comprises an error predictor having an error prediction response $EP(z)$, and wherein after the indication of the coefficients is conveyed to the transmitter, an updated filter response $DFET'(z)$ is implemented in the feedback loop filter substantially as given by $DFET'(z) = [1+DFET(z)][1-EP(z)]^{-1}$.
14. (Original) Apparatus according to claim 1, wherein the Tomlinson-Harashima precoder comprises a feedback loop filter, and wherein the indication of the coefficients conveyed by the receiver to the transmitter comprises values of the coefficients, based upon which a filter response of the feedback loop filter is calculated and implemented at the transmitter.
15. (Original) Apparatus according to claim 1, wherein the Tomlinson-Harashima precoder comprises a feedback loop filter, and wherein a filter response of the feedback loop filter is calculated at the receiver based on the coefficients, such that the indication of the coefficients conveyed by the receiver to the transmitter comprises the calculated filter response.
16. (Currently amended) A receiver, for receiving a signal transmitted over a channel by a transmitter that includes a Tomlinson-Harashima precoder, the receiver comprising:
a feed-forward equalizer (FFE), adapted to apply a feed-forward equalization

response of a feedback loop filter in the Tomlinson-Harashima precoder based on the values.

30. (Original) A method according to claim 28, wherein conveying the indication comprises calculating a filter response of a feedback loop filter in the Tomlinson-Harashima precoder at the receiver based on the coefficient values, and conveying the calculated filter response to the transmitter.
31. (Canceled)
32. (Original) A method according to claim 28, wherein processing the decision output values comprises applying decision feedback equalization to the received samples using the values, so that the filter coefficients comprise adaptive decision feedback equalization coefficients.
33. (Original) A method according to claim 28, wherein processing the decision output values comprises applying error prediction to the received samples using the values, so that the filter coefficients comprise adaptive error prediction coefficients.
34. (Original) A method according to claim 28, wherein decoding the sequence of input samples comprises applying a modulo operation to the sequence of received samples so as to generate decoded samples within the predetermined modulo range, and applying a decision device to the decoded samples so as to reconstruct the input symbols.
35. (Original) A method according to claim 28, wherein conveying the indication of the coefficient values to the transmitter comprises computing a cost function, indicative of a change in the coefficient values, and conveying the indication of

